

New York State Agricultural Experiment Station

Geneva, N. Y.

VINIFERA OR EUROPEAN GRAPES IN NEW YORK

The European grape, commonly known as the California grape, failed to grow satisfactorily in New York when tested by pioneer fruit growers. Judging from the performance of over 100 Vinifera varieties which have been grown during the past 25 years at this Station, this failure can be explained by the fact that either the best early-maturing varieties were not grown, or if they were, that the vines were not properly protected for the winter.

The European grape cannot yet be considered a commercial grape in New York, owing to its susceptibility to winter injury, but it can be grown with a fair degree of success, providing proper varieties and vigorous root stocks are selected. For the lover of pure vinous and muscat flavors, and for the plant breeder, Vinifera grapes have a place.

PLANTING AND TRAINING

Vinifera grapes require less space than native sorts. In Europe they are frequently planted 4 by 4 feet. To facilitate cultivation with horse-drawn implements, it is advisable to set the rows 8 feet apart and the vines 4 to 6 feet apart in the row.

Grafted grapes should be planted so that the place of union is close to the surface. If planted deep, the vine may become own-rooted.

Vinifera grapes must be pruned in such a manner that the wood can be covered with soil during the winter. Possibly the low-headed "vase-form" or "goblet" system might be used successfully as it would be easy to cover the head for the first few years. According to this method, the canes are cut back in the fall to spurs of two



buds, the cut being made about 1 inch above the upper bud. The first year one spur is left, the second year two, and the following years more, depending upon the strength of the vine. A large, vigorous vine should have at least six or seven spurs. The first few years the vines may be supported by a stake. After the trunk becomes well established it will support itself.

At this Station a modified horizontal arm spur system has been used successfully. The arms should be kept about 8 inches from the ground in order to facilitate covering with soil. The first year the vine is cut back to two buds and the second two canes are attached to the lowest wire; the number of buds retained depends upon the vigor of the vine. The arising shoots are either staked or tied to a trellis. The following fall, two short canes with about five or six buds are saved on each arm and the remaining new growth is spurred back to two buds, the cut being made 1 inch above the bud. Each succeeding fall a similar method is followed, an effort being made to renew the wood close to the trunk. The number of buds to be left from year to year must depend upon the vigor of the vine. Each summer the new growth is tied to the trellis and headed back after it surpasses the top wire. Removal of secondary shoots is recommended as this summer pruning is said to aid in the early maturity of wood and fruit. With the exception of the Sultanina, or Thompson Seedless, and a few miscellaneous varieties, close pruning is advisable.

Before the ground freezes the vines should be pruned, cut from the wire, bent to the ground, and covered with about 6 inches of soil. Early in the spring the vines must be uncovered and retied to the trellis.

ROOT STOCKS

On account of possible injury from phylloxera, a root louse, and in order to increase yield, it is recommended that Vinifera varieties be either root grafted before planting or grafted in the vineyard upon one of the vigorous root stocks which have proved of value in France and America. A number of these stocks, such as Riparia Gloire, Rupestris du Lot, and Riparia x Rupestris 3306 and 3309, have grown exceptionally well at Geneva and can be recommended. Undoubtedly, many other stocks will be found of value, since a large number of miscellaneous native seedlings give excellent results when grafted to European varieties.

SELECTION OF VARIETIES

There are a large number of varieties of *Vinifera* grapes. One large French nursery alone offers 1,000 kinds. Over 100 varieties have been fruited at Geneva and recently 150 new kinds have been obtained for trial. Unfortunately, many of the *Viniferas* ripen too late for New York, but a few are very early, two kinds in fact, *Csaba* and *Noir Hatif de Marseille*, ripen as early as the earliest of the native sorts.

Of all varieties, **Chasselas Golden**, which ripens with *Concord*, is the most certain cropper. Its vine has proved hardy when left unprotected during two winters, and this character undoubtedly accounts for its wide distribution in Europe. The cluster and berry of **Chasselas Golden** is above medium. Its fruit is yellowish green, translucent, juicy, slightly meaty, tender fleshed, sweet, vinous, and very good in quality. The skin is neutral flavored and adherent to the flesh.

There are a number of grapes of the *Chasselas* type but none have thrived better than the *Golden*. **Chasselas Ciotot** produces fruit similar to that of the *Golden*, but it differs in that its foliage is deeply incised. The light red type of *Chasselas*, represented by *Chasselas Violet*, is well worthy of trial. Apparently it differs from the *Golden* mainly in fruit color, as the vines and fruit are otherwise apparently identical.

The earliest maturing white *Vinifera* grape grown on the Station grounds is the **Csaba**. Its fruit has the delicate, vinous, sweet flavor of the European grape, but unfortunately the vines have been weak and unproductive. Under more favorable climatic conditions, this variety may prove of value.

Lignan Blanc, **Muscat Saint-Laurent**, and **Precoce de Malingre** are other white varieties which mature their fruit at Geneva. *Lignan Blanc* is widely grown in Europe but is neither as hardy nor as productive as *Chasselas Golden*. Its fruit, which ripens about one week earlier than *Chasselas Golden*, is sweet, vinous-flavored, and excellent in quality. The clusters average below medium in size, while the berries are medium, oval, juicy, and meaty. The skin is tender and adherent.

Precoce de Malingre is a newer variety than either *Chasselas Golden* or *Lignan Blanc* and has been meeting favor as a table grape because of its earliness. At Geneva its season is two weeks

earlier than Chasselas Golden, while in France it is said to be a month earlier. Its clusters are below medium in size and moderately compact, while its berries are oval, below medium to small, tender, crisp, juicy, vinous, sweet, and highly flavored.

Muscat Saint-Laurent is noted for its early maturity, it ripens with or slightly before Chasselas Golden, and its delicate muscat aroma. It is only moderately productive, the clusters average medium to small. The berries are medium to small, round-oval, greenish-yellow with distinct russet dots, and possess a tender, juicy, sweet-flavored pulp.

The earliest maturing black variety tested is the **Noir hatif de Marseille**. Unfortunately, this variety lacks productiveness, but this defect is said to be overcome by grafting upon a vigorous stock such as No. 3306 or No. 3309. In France, it is grown commercially. The clusters are medium in size, and the berries are medium, globular, firm-fleshed, sweet, and muscat-flavored. In consideration of its high quality and flavor it is recommended for trial.

Cinsaut is an old variety grown in France for dessert and wine purposes. When grafted upon *Rupestris du Lot* and *Riparia x Rupestris* No. 3309, it has given satisfactory yields. Its fruit ripens about a week later than Concord and about one week earlier than Muscat Hamburg. The vine is productive, while the clusters are above medium to large, and generally winged. The berries are large to small, averaging above medium, reddish black to black with a bloom, oval, juicy, vinous, sprightly to sweet, and very good in quality.

Muscat Hamburg is the best black grape of the Muscat type. In France it has been known since ancient times and in England it is commonly grown in greenhouses. The vine is vigorous and productive and requires close pruning. The fruit ripens at about the same season as Catawba and therefore does not always ripen at Geneva. Its clusters are medium to above medium in size, tapering, medium compact to loose, and its berries are large to medium, sometimes small, oval to round-oval, black with a bloom, meaty, tender, crisp, juicy, sweet, vinous, muscat-flavored, and very good in quality.

Malaga and **Flame Tokay** do not mature at Geneva. **Rozaki**, which resembles Malaga, occasionally ripens, but since it is about one week later than Muscat Hamburg it is not recommended.

In addition to the table sorts there are a number of varieties which have merit as juice grapes. **Blue Portuguese** is one of the earliest of

this type and ripens about one week prior to Concord. Its clusters, which vary from medium to small, are medium compact, while its berries are medium, oval, black, juicy, melting, sweet, thin skinned, and good in quality. Altho this variety does not equal the table grapes in flavor, it is pleasant to eat out of hand.

The **Pinot** grapes are ancient and numerous. Two varieties, the Gray and the White, are very similar except in color. This resemblance might be expected as the white variety is said occasionally to arise as a sport from the gray. In 1925, the writer noted that one-half of a Gray Pinot vine in the Station vineyard was bearing white berries instead of the normal greenish red fruit. Since the vine had not been grafted and since the berries varied only in color, it was obvious that a sporting in color had occurred.

The main objection to the Pinots is that they produce only moderate crops. Their fruit ripens about with Concord. The clusters are small and compact, while the berries are medium to small, round-oval, juicy, tender, vinous, sweet, and of very good quality. Possibly, under more favorable conditions, the Pinots will prove as productive as in Europe.

Teinturier ripens with the Pinots and owing to its intense, wine-colored juice and good quality, it is recommended. Its clusters are medium, tapering, shouldered, and compact, while its berries, which average below medium, are round-oval, black, with a thick bloom, juicy, melting, sprightly, and good in quality. The vine is a vigorous grower and moderately productive and is characterized in the autumn by its red-tinged foliage.

Syrah, or **Petit Syrah**, is a black juice grape that ripens with the Catawba, and altho late in ripening, is recommended on account of its productiveness and hardiness. During mild winters the vines have suffered little or no injury, but during severe winters the wood has been winterkilled. Its clusters are medium, tapering, and compact, and its berries are medium to below, roundish oval, black, juicy, melting, sprightly, and good in quality. The skin is medium in thickness and toughness and is pigmented, but the juice is non-colored.

Alicante Bouschet and **Zinfandel** are grown extensively in California as juice grapes, but generally they are too late in ripening at Geneva. The former is noted for its highly colored juice and the latter for its immense production. The clusters of **Alicante Bouschet**

are large, tapering, shouldered, and compact to loose, while its berries average medium and are black with a thick bloom, roundish oval, juicy, slightly meaty, sweet to sprightly, and good in quality. The skin is thick and tough. **Zinfandel** produces very large clusters which are tapering to cylindrical and shouldered, and berries that are above medium in size, roundish oval, very juicy, but colorless, melting, agreeably sprightly, and good in quality. The skin of the berry is thin, medium tough, and black.

More varieties that approach the border line of desirability for testing might be mentioned. For example, **Fehér Szagos** was considered in 1925 as well worthy of trial as a table grape; but since it is surpassed by the Golden Chasselas in attractiveness, it is not recommended. **Duc de Magenta**, another table grape has not proved equal to either Cinsaut or Muscat Hamburg, altho under favorable conditions, as in 1925, it was noted as worthy of trial. **Poulsard**, a dark-red grape, has been noted as worthy of a trial for dessert purposes, but its clusters are small.

Sultanina Rosea has rarely fruited at Geneva and consequently can not be recommended.

VINIFERA HYBRIDS

There are a number of grapes similar to the Viniferas in appearance and quality that have been produced by crossing a Vinifera variety with one of the native sorts. These varieties have the advantage in being hardier and more productive than the Vinifera parent. A few old and new hybrids that are well worthy of trial are given below.

Allen's Hybrid is the first named hybrid between *Vitis labrusca* and *Vitis vinifera*. Its fruit ripens with and resembles the Golden Chasselas, one of its parents, but unfortunately the vine is only moderately productive. The clusters and berries are medium in size and greenish-yellow in color. The flesh is meaty, tender, sweet, vinous, and high in quality.

Downing is a black grape produced from a cross between Muscat Hamburg and an American variety. Its vine is a little tender during severe winters and moderately productive. The fruit ripens a little later than Concord and will keep in storage until Spring. Its clusters are large and slightly tapering, and its berries large to medium, oval, tender-fleshed, juicy, vinous, and very good in quality. Like many Viniferas, the skin adheres to the pulp and lacks astringency.

Golden Muscat was produced at this Station by crossing Muscat Hamburg with Diamond. The vine is hardy and productive, and the clusters are large and tapering. The berries are large, oval, greenish yellow with a white bloom, juicy, slightly meaty, sweet, vinous, muscat-flavored, and very good in quality. Since this attractive, highly flavored grape ripens with the Concord, it is well worth a trial. Its skin is tender, which is a handicap for shipping, and for maximum quality it requires hot weather.

Keuka, another Station product, was produced by crossing Chasselas Rose with Mills. The vine is hardy, medium productive, and ripens its fruit about one week later than Concord. The clusters are medium, compact, cylindrical to tapering, and the berries medium roundish oval, dark red with a lilac bloom, tender, juicy, sweet, vinous, and very good in quality. The skin is medium tough and adherent to the flesh.

Mills was originated about 1870 by W. H. Mills of Hamilton, Ontario, by crossing the Muscat Hamburg with Creveling. The berries of this grape have a thick, tough, adherent skin and a firm, meaty, sweet, vinous flesh and keep in storage until late spring. The clusters are large, cylindrical to tapering, compact, and the berries large, oval, jet-black, aromatic, and very good in quality. The vine is vigorous and productive, but subject to winter injury and mildew. This variety has proved to be an excellent parent and is well worth a trial.

Urbana was produced at this Station by crossing Ross with Mills and, like Mills, is a most excellent keeper. The fruit of this variety is much like a Vinifera, since its berries are roundish oval, firm and tender-fleshed, and possess a skin that adheres to the pulp. The vine is productive but slightly tender during severe winters. The clusters are medium to large, cylindrical, and compact, and the berries are large, light red, aromatic, vinous, sweet, and very good in quality. Since its season is nearly as late as Catawba, Urbana should be grown under favorable conditions.

April 1, 1928

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